Obsolescence Management
of Commercial Technologies

22 April 1997
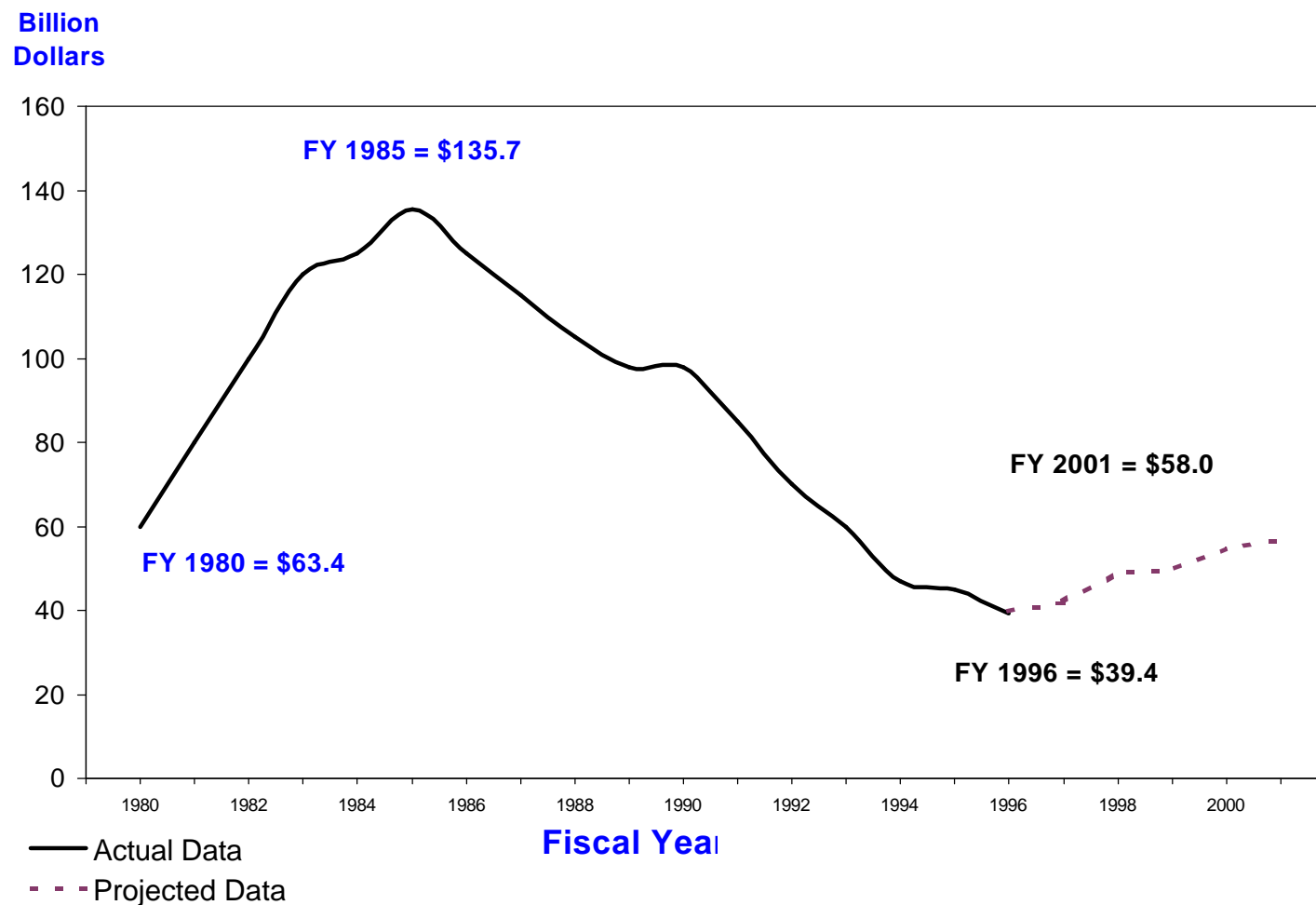
Mr. Rick Easter
Phone: 812-854-2380
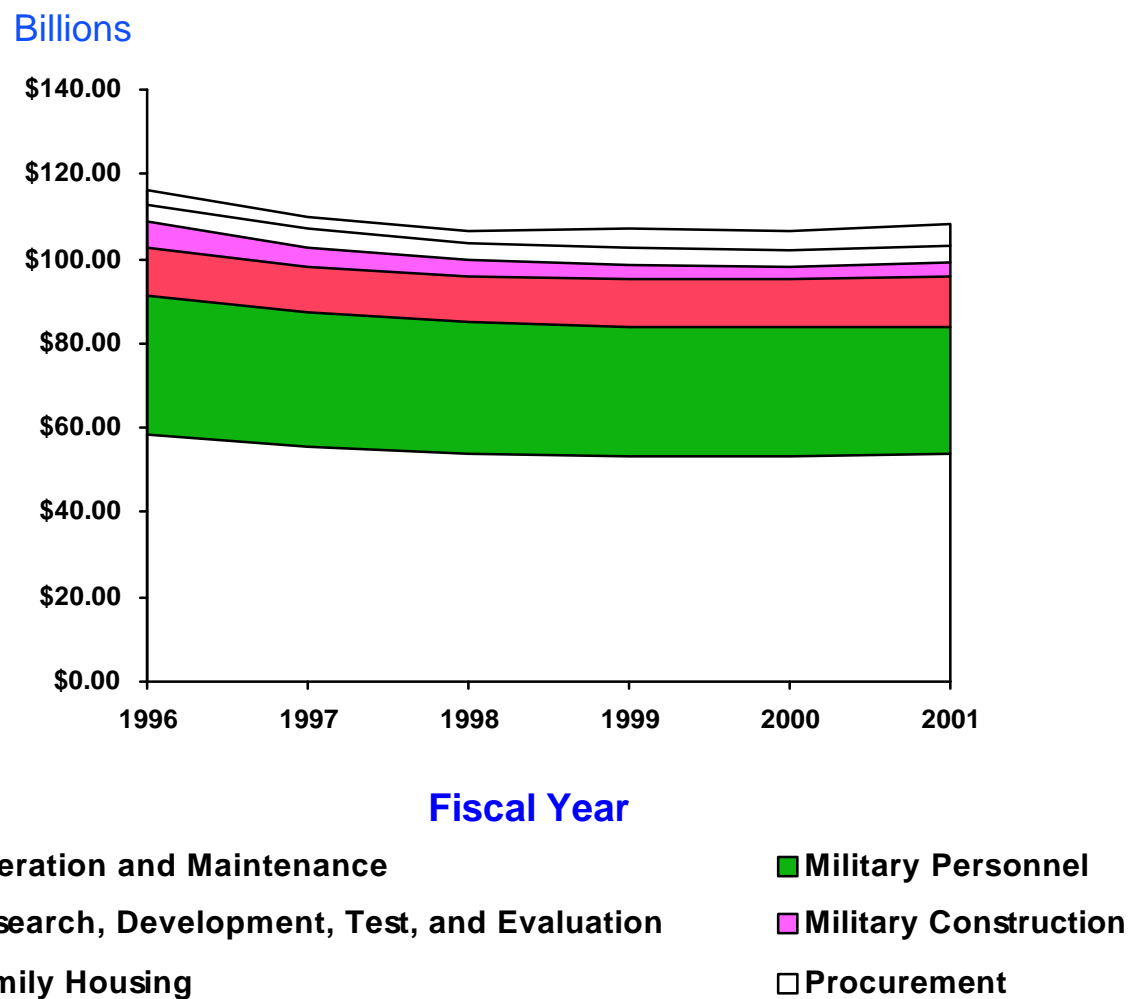**Telefax: 812-854-4248**

OBJECTIVE

- Leverage off NSWC Crane existing expertise and tool sets to create a tightly coupled process and integrated tool set that accurately and efficiently performs technology assessments of build to print and commercial based (COTS) electronic systems to:
    - Identify near and long term life cycle support problems
    - Identify alternatives and options
    - Target viable solutions
    - Perform cost analysis of targeted solutions
                        AND
    - **Outputs** system cost /schedules and support strategy to assist in program planning and budgeting process throughout the life of the system

DOD Procurement Budget
1980 to 2001 (of Constant 1996 Dollars)

Billion Dollars

FY 1985 = $135.7

FY 2001 = $58.0

FY 1980 = $63.4

FY 1996 = $39.4

Fiscal Year

—— Actual Data

- - - Projected Data

Direct Infrastructure Funding by Appropriation (FY 1996-2001)

Billions

Fiscal Year

☐ Operation and Maintenance   ■ Military Personnel

■ Research, Development, Test, and Evaluation   ■ Military Construction

☐ Family Housing   ☐ Procurement

Process Overview

Process and Tools for:
Build to print and commercial based equipment

Mission Requirements
-Support Strategy
-Program Schedules

Problem ID
- When
- What
- Where

Supply Info

Health Analysis
(Current snapshot)

Obsolescence
&
Availability

Short or Long-Term Problems?

No - **Do nothing** *(future re-look)*

Yes

Solutions

**Solutions
Options/Alternatives**

Costs

Cost Analysis

**Support Strategy,
Cost/Schedule
*Projection***

**Program Planning
(PPBS, POM)**
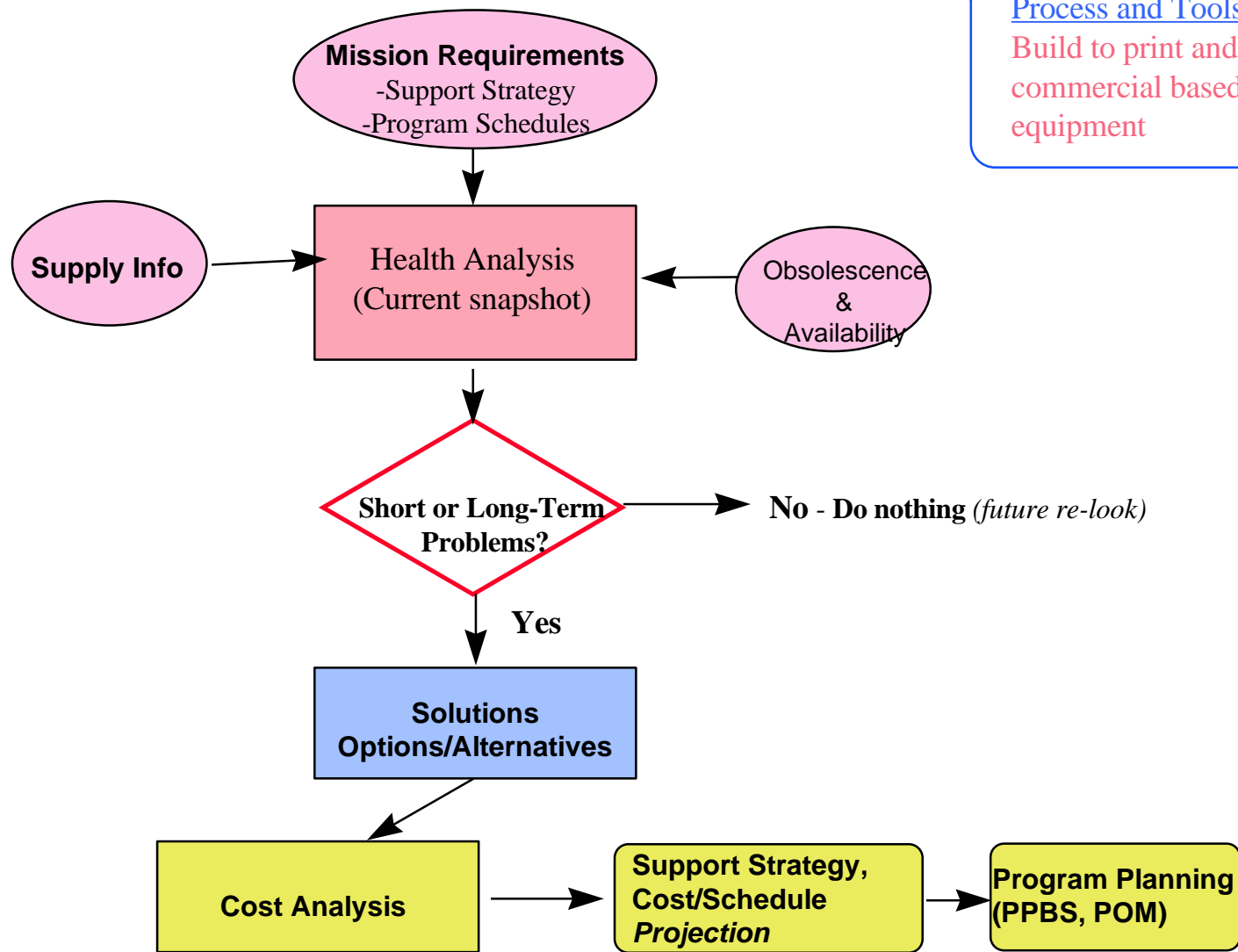
Solution Alternatives/Options

Problems and Opportunities

Market Surveys

Technology Trends

Analysis of Potential Solutions

Upgradeability

Supportability

Openness

Selection of Viable Solution Options

Bridge Buys

Spare Utilization
- NAVICP Assets
- DECOM "
- Program "
- Contractor "

Piece Part Substitution
- After Market
- GEM
- Commercial parts Replacement

Module Redesign
- FPGA & PLD
- ASIC

Unit Redesign

COTS/NDI Replacement Major Impact
- New Product-Different Vendor
- New Technology

COTS/NDI Replacement Minimal Impact
- New Rev-Same Vendor
- New Product-Same Vendor

Cost Analysis

Viable Solution Options

Standard Cost Estimation Parameters

Eng..   Log.
------   ------
------   ------
------   ------

Long Term Planning

Cost Analysis

Specific Cost Estimation Parameters

Eng..   Log.
------   ------
------   ------
------   ------

Short Term Implementation
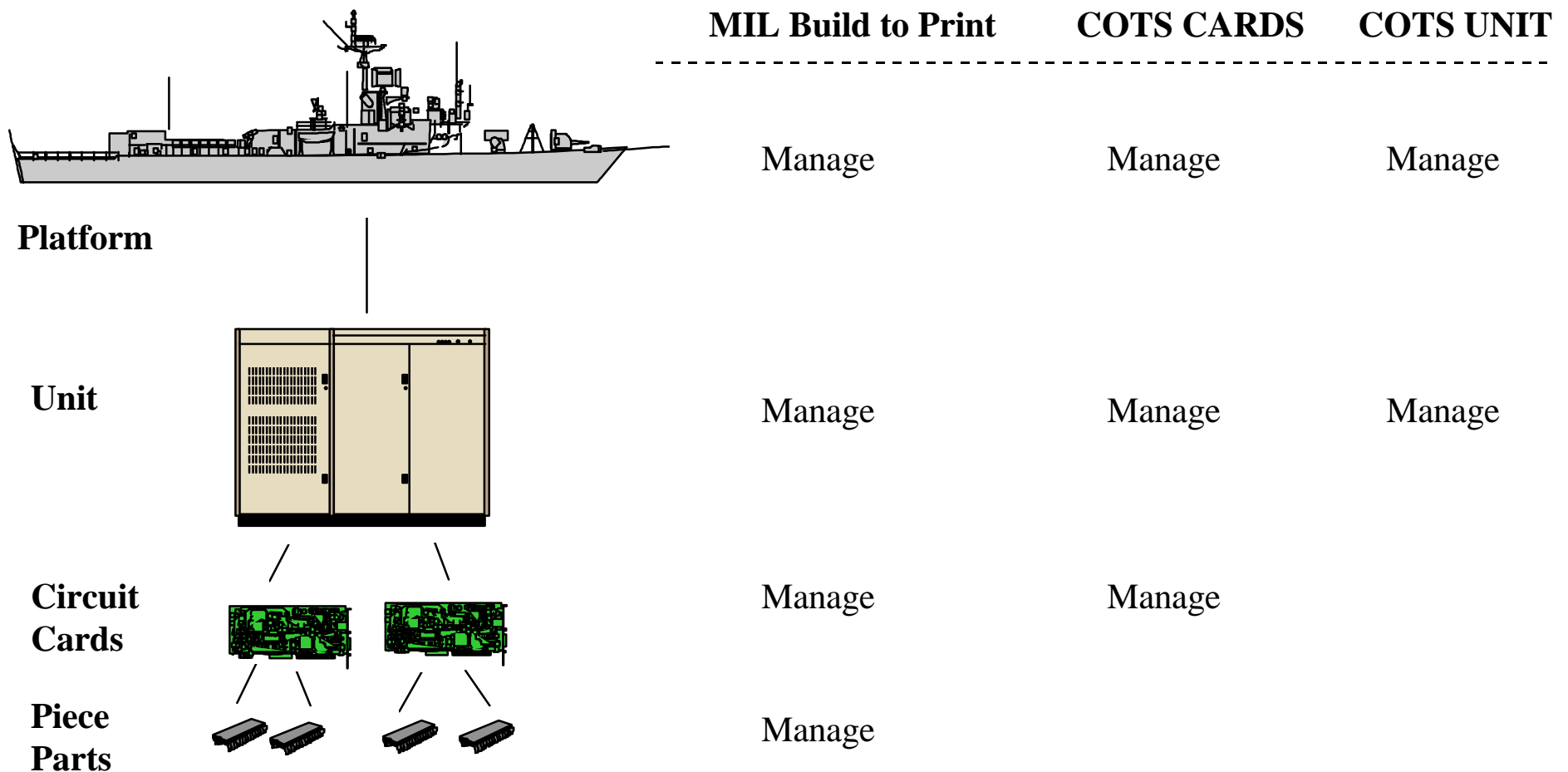
Support Strategy

Cost of Ownership

Cost

Time

Acquisition Reform and DMS

- Result of Acquisition Reform is an ever increasing use of Commercial Off The Shelf (COTS) products

- Obsolescence is a greater issue with COTS
  - Commercial markets drive the life of COTS Products
  - "Most COTS vendors plan product upgrades every 12 to 18 months" *Source: COTS Platform Compatibility Study, NAVSEA*
  - "To be successful we must obsolete our products" - Bill Gates

- Successful obsolescence management will require an integration of approaches, tools, and processes for both legacy build to print and commercial products and technology

Differences Between COTS and Mil Build to Print

Commercial   **MIL Build to Print**

Commercial		MIL Build to Print
Low	Cost	High
Short	Lifespan	Long
Large	Market	Small
Many	Vendors	Few
High	Interchangability	Low

DMS Management Levels

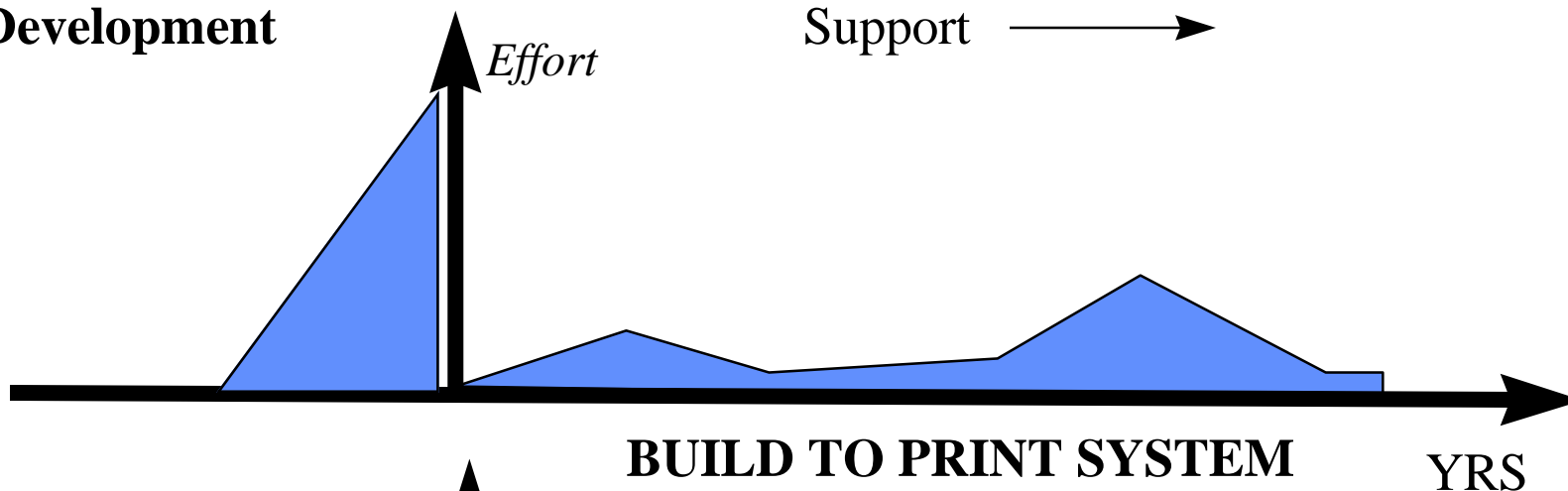|	MIL Build to Print	COTS CARDS	COTS UNIT
Platform	Manage	Manage	Manage
Unit	Manage	Manage	Manage
Circuit Cards	Manage	Manage	
Piece Parts	Manage		
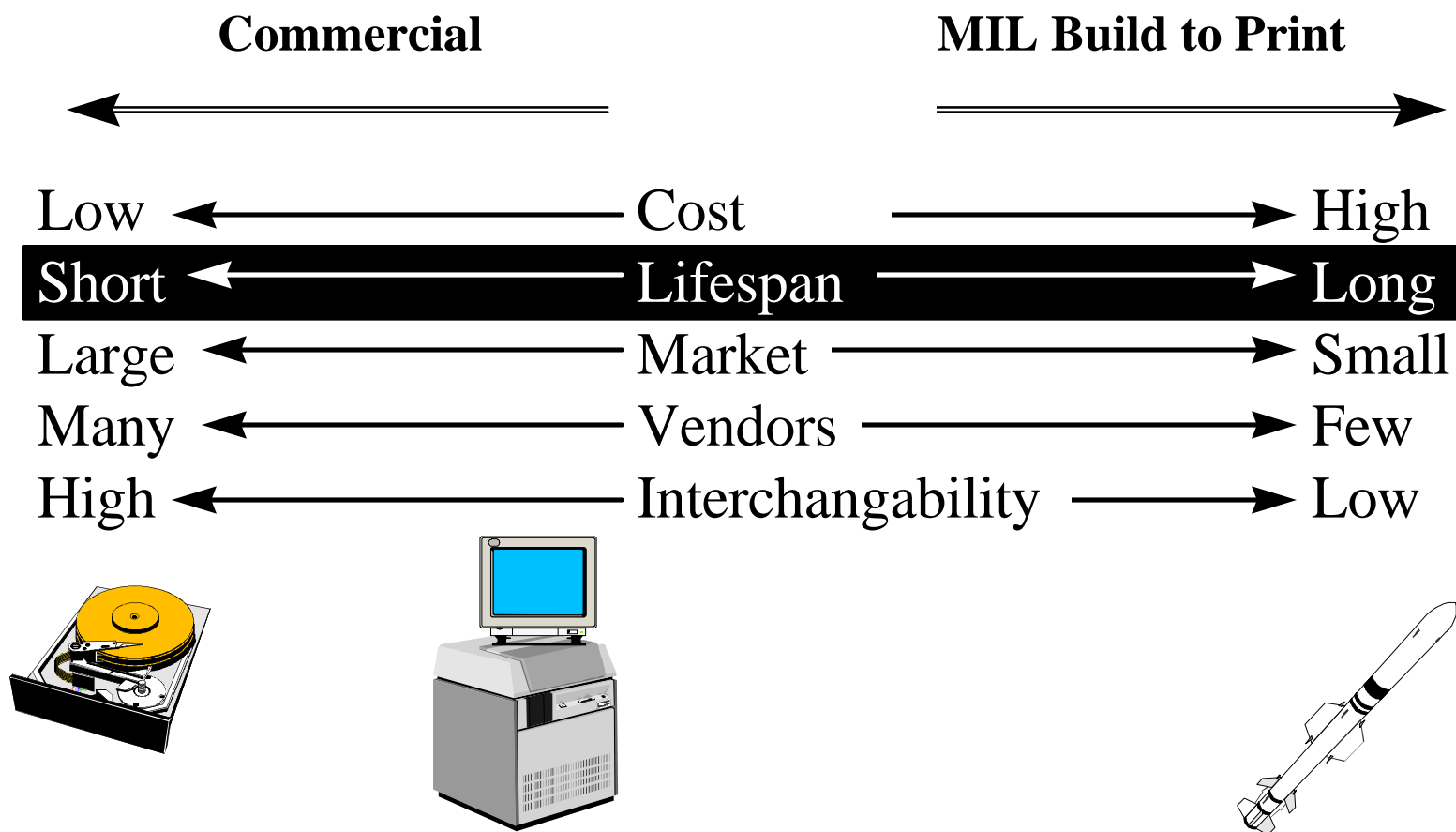
COTS obsolescence management uses the same skill set, but requires a modified knowledge base due to higher levels of integration

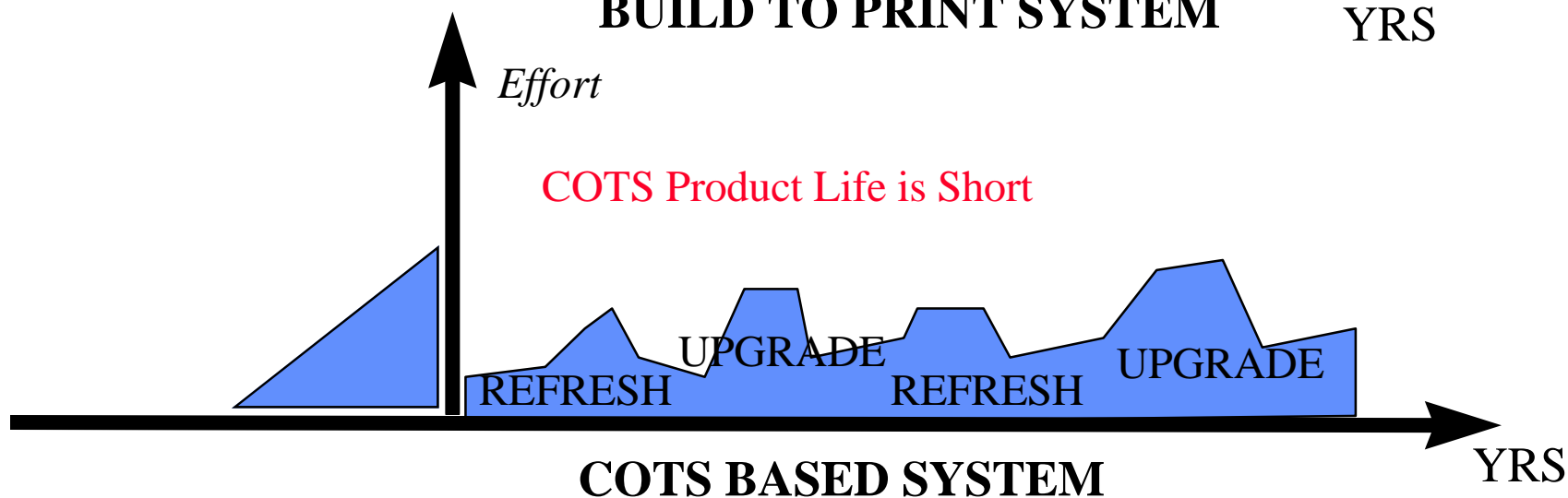# Nominal Comparison of Build to Print and COTS Based System
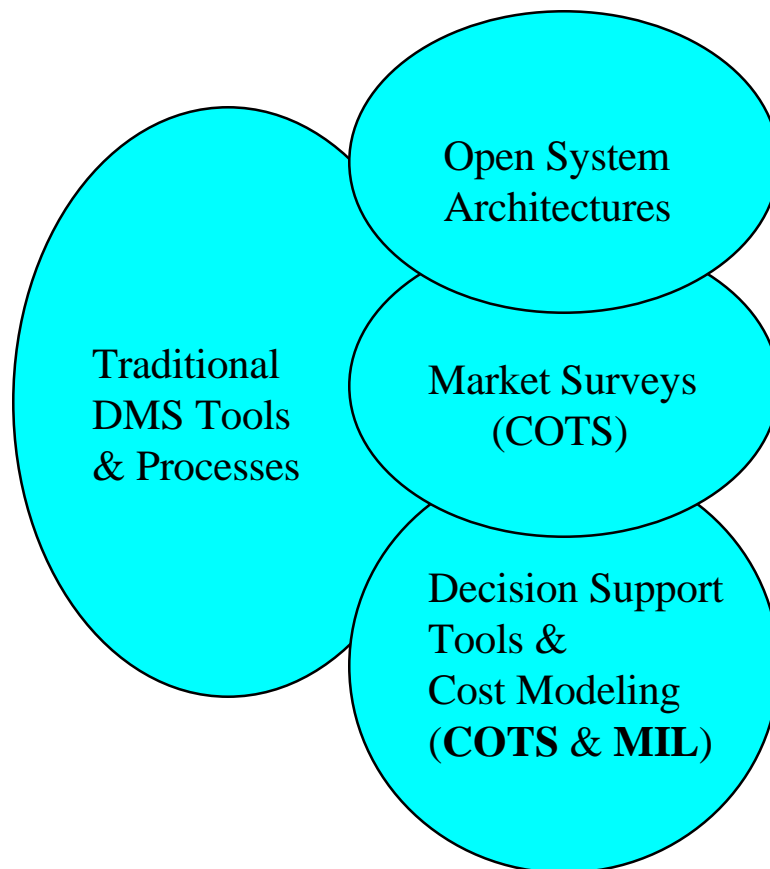
Development   Support ⟶

Effort

BUILD TO PRINT SYSTEM   YRS

Effort

COTS Product Life is Short

UPGRADE

REFRESH   REFRESH   UPGRADE

COTS BASED SYSTEM   YRS

DMS
Technology
Center

NAVAL SEA SYSTEMS COMMAND
NSWC
Naval Surface Warfare Center
CRANE DIVISION

DMS Integration

Military Build to Print

Traditional DMS Tools & Processes

Open System Architectures

Structured Approach for Inserting New COTS Products and Technology

Market Surveys (COTS)

What's Suitable & Available?
From Whom?
For How Long?

Decision Support Tools & Cost Modeling (**COTS & MIL**)

What to Replace
When to Replace
How to Replace
Optimize Cost Avoidance

Integration of traditional obsolescence methods with those needed to manage COTS products

Summary

- DOD Budgets Have Decreased and Funding has Shifted From Procurement to Operation and Maintenance Accounts
- Services Looking for Processes to Remodernize Fielded Systems
- Newly Acquired Equipment Will Be Primarily COTS/NDI
- Surface Warfare Center Proactively Incorporating Legacy System Management "Lessons Learned" into COTS Management
- Crane Division Utilizing "Single Process" for Both Commercial And Military Systems
- Output Provides Decision Support Data for Program Manager to:
  - Determine Today's System Support Cost & Drivers
  - Reprogram Budget as Required for Future System Support
  - Compare Military Versus Commercial System Cost and Schedules